



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

lu

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/700,454

11/05/2003

Kazuaki Oishi

108066-00102

6380

7590

10/07/2004

ARENT FOX KINTNER PLOTKIN & KAHN, PLLC
SUITE 400
1050 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036-5339

EXAMINER

NGUYEN, VINCENT Q

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 10/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,454

Applicant(s)

OISHI ET AL

Examiner

Vincent Q Nguyen

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 8/25/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1-7, it is not understood what is meant by "assigning a lighter weight to the counts at a starting time and ending time of the counting period"?

On figure 7, for example, the illustration of "Weighting values of weight assigning wave number measurement circuit (Count up values for one reference clock)) is not understood. What is the relationship of number "1" and "2" relating to the method? What are digits "1" and "2" represented for? Why only the digits 0, 1 or 2 are represented?

For the purpose of examination, examiner assumes that the weighting values are the values of time before or after the signal is rising or the falling (Rising or falling edges) of a duty cycle.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hulsing (5,095,264).

Regarding claims 1-7, Hulsing discloses a frequency measurement circuit for measuring frequency comprising (Figures 3, 5) a frequency measurement unit (52) for counting a reference clock during a counting period having a predetermined number of waves of the input signal, wherein the frequency measurement unit (52) counts the reference clock, compared with the other times.

The only difference between Hulsing and the invention claimed is that the claim recites the step of counting the reference clock by assigning a lighter weight to the counter at a starting time and ending time of the counting period in place of sample time as taught by Hulsing (Figure 5).

Although, Hulsing does not explicitly disclose, it would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize that the sample time would assign value to the counter (Column 4, lines 3-9) to minimize the effect of a duty cycle to enhance the accuracy of the frequency measuring (Column 4, lines 50-57).

Response to Arguments

5. Applicant's arguments filed 8/25/2004 have been fully considered but they are not persuasive.

In response to Applicant's argument that: "Applicants highlight pages 20-24 and Figs. 7 and 8 of the present application, which provides full, clear, concise and exact terms of the written disclosure to one skilled in the art to make and use the present invention in accordance with 35 U.S.C. 112, first paragraph. The "amount of weighting" as shown in Fig. 7 is a number (e.g., "1" or "2") which is generated by a weight assigning amount generator 104 of Fig. 8 as a weight assigning amount S104, and is supplied to an adder 100 of Fig. 8".

As examiner mentioned in the telephone interview, the disclosure is not clear to understand. In fact, examiner still doesn't understand what is meant by "assigning a lighter weight".

On page 21, for example, lines 1-6 written: "This is also an example where out (Typographical error of output?) of the rising edges of the input signal C_{in} , the rising edges of the input signal agrees with the rising edges of the reference clock C_b at the times t_0 , t_1 , t_4 , ... And the counting period is the period from the time t_0 to $M+1$ cycles of the time t_{M+1} ."

The mentioned time t_4 is not found in figures 7 or 8 (t_4 is shown in figure 4 for the purpose of illustrating the operating waveform showing an example when the cycles of the input signal and the reference clock are in the ratio of 7:3. Does Applicant refer to this t_4 ?).

Examiner assumes that on page 21, lines 1-6, t_2 was mistyped (i.e. the input signal agrees with the rising edges of the reference clock C_b at the times t_0 , t_1 , t_2 , ...). Although the assumption was made, the rising edges of the input signal C_{in} agrees only at t_0 and t_2 . The input signal C_{in} at t_1 and the reference clock signal do not agree (i.e. the signals are not rising together and falling together). At the time t_1 , C_{in} is rising while the reference clock is falling.

Examiner is not understood what is meant by "lighter amount of weighting". What are the digits 0, 1, and 2 are standing for? Why only the digits 0, 1, and 2, are represented? (The examiner is confusing because of the use of the digit 2 since in digital, only 0 or 1 is used).

In response to Applicant's argument that: "Hulsing discloses a dual-edge frequency counter 50 that includes a first counter 52 and a second counter 56. In Hulsing, it is merely disclosed that each of the first and second counters 52, 56 counts a reference clock pulses from reference clock 58 during a sample time including predetermined number (N) of waves of a sensor signal fin. Thus Hulsing fails to disclose or suggest at least the limitations of "a frequency measurement unit" which "counts the reference clock by using a lighter amount of weighting to each count at a starting time and an ending time of the counting period, than the amount of weighting at the other times of the counting period" as recited in amended claim 1."

Hulsing disclose the step of counting the reference clock by using a "lighter amount of weighting" for the purpose of minimizing the effects of the sample to enhance the accuracy of the measurement (Hulsing's column 4, lines 50-57). The step of using a

“lighter amount of weighting” is based on the rising or falling times (As examiner’s assumption for the “lighter amount of weighting”) which affects the sample of measurement.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

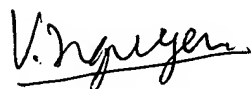
Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

Art Unit: 2858

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571) 272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



October 4, 2004

Vincent Q Nguyen
Patent Examiner
Art Unit 2858